Drinking Water and Health Basics
Frequently Asked Questions
Local Drinking Water Information
Drinking Water Standards
List of Contaminants & MCLs
Regulations & Guidance
Public Drinking Water Systems
Source Water Protection
Underground Injection Control
Data & Databases
Drinking Water Academy
Safe Drinking Water Act
National Drinking Water Advisory Council
Water Infrastructure Security


# Consumer Factsheet on: VINYL CHLORIDE

List of Drinking Water Contaminants

This fact sheet is part of a a collection of fact sheets for volatile organic chemicals with drinking water regulations, to find out more about volatile organic chemicals see this list page

This is a factsheet about a chemical that may be found in some public or private drinking water supplies.

**What is Vinyl Chloride and how is it used?**

Vinyl chloride is a colorless organic gas with a sweet odor. It is used in the manufacture of numerous products in building and construction, automotive industry, electrical wire insulation and cables, piping, industrial and household equipment, medical supplies, and is depended upon heavily by the rubber, paper, and glass industries.

The list of trade names given below may help you find out whether you are using this chemical at home or work.

**Trade Names and Synonyms:**

Chlorethene
Chlorethylene
Monochloroethene
Monovinyl chloride (MVC)
Trovidur

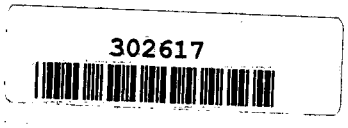
**Why is Vinyl Chloride being Regulated?**

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine safe levels of chemicals in drinking water which may not cause health problems. These non-enforceable levels, based solely on possible health risks and exposure, are called Maximum Contaminant Level Goals.

The MCLG for vinyl chloride has been set at zero because EPA believes this level of protection would not cause any of the potential health problems described below.

Based on this MCLG, EPA has set an enforceable standard called a Maximum Contaminant Level (MCL). MCLs are set as close to the MCLGs as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The MCL has been set at 2 parts per billion (ppb) because EPA believes, given present technology and resources, this is the lowest level to which water systems can reasonably be required to remove this contaminant should it occur in drinking



water.

These drinking water standards and the regulations for ensuring these standards are met, are called National Primary Drinking Water Regulations. All public water supplies must abide by these regulations.

**What are the Health Effects?**

Short-term: EPA has found vinyl chloride to potentially cause the following health effects when people are exposed to it at high levels (40 - 900 mg/L) for relatively short periods of time: damage to the nervous system.

Long-term: Vinyl chloride has the potential to cause cancer and may damage the liver following a lifetime exposure at levels above 0.1 mg/L.

**How much Vinyl Chloride is produced and released to the environment?**

Production of vinyl chloride in 1993 was nearly 14 billion lbs. Its major release to the environment will be as emissions and wastewater at polyvinyl chloride (PVC) plastics production and manufacturing facilities. Small quantities of vinyl chloride can be released to food since it is used to make many food wrappings and containers.

**What happens to Vinyl Chloride when it is released to the environment?**

Vinyl chloride released to soil will either quickly evaporate, be broken down by microbes or may leach to the groundwater. It also rapidly evaporates from water, but does not degrade there. It will not accumulate in aquatic life.

**How will Vinyl Chloride be Detected in and Removed from My Drinking Water?**

The regulation for vinyl chloride became effective in 1989. Between 1993 and 1995, EPA required your water supplier to collect water samples every 3 months for one year and analyze them to find out if vinyl chloride is present above 0.5 ppb. If it is present above this level, the system must continue to monitor this contaminant.

If contaminant levels are found to be consistently above the MCL, your water supplier must take steps to reduce the amount of vinyl chloride so that it is consistently below that level. The following treatment methods have been approved by EPA for removing vinyl chloride: Granular activated charcoal in combination with Packed Tower Aeration.

**How will I know if Vinyl Chloride is in my drinking water?**

If the levels of vinyl chloride exceed the MCL, 2 ppb, the system must notify the public via newspapers, radio, TV and other means. Additional actions, such as providing alternative drinking water supplies, may be required to prevent serious risks to public health.

**Drinking Water Standards:**

MCLG: zero

MCL: 0.002 mg/L, or 2 parts per billion

**Learn more about your drinking water!**

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water. Your water bill or telephone books government listings are a good starting point.

Your local water supplier can give you a list of the chemicals they test for in your water, as well as how your water is treated.

Your state Department of Health/Environment is also a valuable source of information.

For help in locating these agencies or for information on drinking water in general, call: EPAs Safe Drinking Water Hotline: (800) 426-4791.

For additional information on the uses and releases of chemicals in your state, contact the: Community Right-to-Know Hotline: (800) 424-9346.

List of Drinking Water Contaminants

Safewater Home | About Our Office | Publications | Calendar | Links | Office of Water | En Español

EPA Home | Privacy and Security Notice | Contact Us

Last updated on Monday, February 14th, 2005
URL: http://www.epa.gov/safewater/dwh/c-voc/vinylchl.html